In the Claims

Please amend the claims as follows:

1. (Currently Amended) An optical communication device, comprising:

a plurality of integrated modules ~~an integrated circuit~~ operable to ~~generate~~ transmit and receive a plurality of optical signal wavelengths, at least one of the plurality of integrated modules comprising: ~~the integrated circuit comprising:~~

one or more transmitters each ~~a plurality of light sources, each light source~~ operable to generate an optical signal and to modulate information onto the optical signal to form a modulated optical output signal, each modulated optical output signal comprising a first optical signal wavelength; and ~~generate at a specified wavelength an unmodulated optical signal; and~~

~~a plurality of modulators, each modulator coupled to at least one of the plurality of light sources and operable to modulate information onto the unmodulated optical signal based at least in part on an electronic signal to form a plurality of modulated optical output wavelength signals.~~

one or more receivers each operable to receive an input optical signal, each input optical signal comprising a second optical signal wavelength, wherein each first optical signal wavelength is different than each second optical signal wavelength;

a wavelength division multiplexer coupled to the one or more transmitters and coupled to an optical splitter, the wavelength division multiplexer operable to combine the modulated output optical signals into a multiple wavelength output optical signal for communication to the optical splitter, wherein the optical splitter comprises a power splitter that separates the multiple wavelength output optical signal into a plurality of multiple wavelength output optical signals, each of the plurality of output optical signals comprising a substantially similar set of wavelengths; and

a controller coupled to at least some of the plurality of integrated modules, the controller operable to generate a control signal based at least in part on a scheduling algorithm and to communicate the control signal to the at least some of the plurality of integrated modules, wherein the at least some of the plurality of integrated modules use the control signal to reduce contention between the plurality of integrated modules.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (Cancelled)

7. (Original) The optical communication device of Claim 1, further comprising an optical signal separator operable to receive a multiple wavelength optical input signal and to separate that signal into a plurality of optical input wavelength signals.

8. (Currently Amended) The optical communication device of Claim 7, wherein at least one of the plurality of optical input signal wavelengths comprises a packet comprising an identifier ~~the identifier~~ associated with a destination ~~the destination~~ element external to the optical communication ~~processing~~ device.

9. (Original) The optical communication device of Claim 8, wherein the packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet.

10. (Original) The optical communication device of Claim 8, wherein the packet comprises a Multi Protocol Label Switching (MPLS) or a Generalized Multi Protocol Label Switching (GMPLS) packet.

11. (Currently Amended) The optical communication device of Claim 7, wherein the separator is a device selected from the group consisting of a wavelength division demultiplexer, a waveguide ~~wavelength~~ grating router, and an arrayed waveguide ~~wavelength~~ grating.

12. (Cancelled)

13. (Currently Amended) The optical communication device of Claim 1, wherein the transmitter includes at least one light source ~~at least some of the plurality of light sources are~~ selected from the group consisting of fixed wavelength lasers and tunable lasers.

14. (Currently Amended) The optical communication device of Claim 1, wherein the transmitter includes at least one light source ~~at least some of the plurality of light sources are~~ selected from the group consisting of laser diodes and light emitting diodes.

15. (Cancelled)

16. (Cancelled)

17. (Original) The optical communication device of Claim 1, wherein the optical communication device comprises a router.

18. (Currently Amended) An optical communication device, comprising:

a plurality of integrated modules each ~~circuits~~ operable to receive at least some of a plurality of optical signal wavelengths, each of the plurality of integrated modules ~~circuits~~ comprising:

an optical signal separator operable to separate an input optical signal from the plurality of optical signal wavelengths ~~wavelength~~ received by the integrated module, the input optical signal comprising a first optical signal wavelength;

~~one or more controllers~~ a receiver coupled to the optical signal separator, the receiver operable to receive the first optical signal wavelength and ~~operable~~ to convert at least a portion of ~~each~~ the first optical signal wavelength into ~~received by the integrated circuit to~~ an electronic signal; and

~~a plurality of optical transmitters, each optical transmitter~~ an optical transmitter operable to generate an optical signal and to modulate information onto the optical signal ~~based at least in part on the electrical signal~~ to form a modulated optical output signal, the modulated optical output signal comprising a second optical signal wavelength, wherein the first optical signal wavelength is different than the second optical signal wavelength of the input optical signals;

an optical splitter coupled to at least some of the plurality of integrated modules, wherein the optical splitter comprises a power splitter that receives a multiple wavelength output optical signal and separates the multiple wavelength output optical signal into a plurality of multiple wavelength output optical signals, each of the plurality of output optical signals comprising a substantially similar set of wavelengths; and

a controller coupled to at least some of the plurality of integrated modules, the controller operable to generate a control signal based at least in part on a scheduling algorithm and to communicate the control signal to the at least some of the plurality of integrated modules, wherein the at least some of the plurality of integrated modules use the control signal to reduce contention between the plurality of integrated modules.

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) The optical communication device of Claim 18, ~~Claim 23,~~ wherein at least one of the plurality of optical input signal wavelengths comprises a packet comprising an identifier ~~the identifier~~ associated with a destination ~~the destination~~ element external to the optical communication ~~processing~~ device.

25. (Original) The optical communication device of Claim 24, wherein the packet comprises an Internet Protocol (IP) packet or a Transmission Control Protocol (TCP) packet.

26. (Cancelled)

27. (Currently Amended) The optical communication device of Claim 18, ~~Claim 23,~~ wherein the separator is a device selected from the group consisting of a wavelength division demultiplexer, a waveguide ~~wavelength~~ grating router, and an arrayed waveguide ~~wavelength~~ grating.

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Currently Amended) The communication device of Claim 18, ~~Claim 32,~~ wherein the optical transmitter comprises a light source operable to generate at a specified wavelength, and wherein the light source is selected from the group consisting of fixed wavelength lasers and tunable lasers.

34. (Currently Amended) The communication device of Claim 18, ~~Claim 32,~~ wherein the optical transmitter comprises a light source operable to generate at a specified wavelength, and wherein the light source is selected from the group consisting of laser diodes and light emitting diodes.

35. (Original) The communication device of Claim 18, further comprising a combiner operable to receive each of the optical output wavelength signals and to generate a multiple wavelength output optical signal.

36. (Currently Amended) An optical communication system ~~device~~, comprising:

a first integrated module that generates a first output signal comprising a first optical signal wavelength, the first integrated module coupled to an optical distribution network comprising one or more optical power splitters, at least some of a first one or more of the optical power splitters receive the first output signal and separate the first output signal into a plurality of first output optical signals, each of the plurality of first output optical signals comprising a substantially similar set of wavelengths;

a second integrated module that generates a second output signal comprising a second optical signal wavelength, the second integrated module coupled to the optical distribution network comprising the one or more optical power splitters, wherein the second integrated module receives at least one of the plurality of first output optical signals and wherein at least the second integrated module comprises:

an optical signal separator operable to separate the first optical signal wavelength from one or more optical signal wavelengths received by the second integrated module;

one or more receivers operable to receive the first optical signal wavelength and to convert at least a portion of the first optical signal wavelength into an electrical signal; and

one or more transmitters each operable to generate the second output optical signal at the second optical signal wavelength and to modulate information onto the second output optical signal, wherein the first optical signal wavelength is different than the second optical signal wavelength; and

a controller coupled to the first and second integrated modules, the controller operable to generate a control signal based at least in part on a scheduling algorithm and to communicate the control signal to at least the first and second integrated modules, wherein the first and second integrated modules use the control signal to reduce contention within the optical communication system.

~~an integrated circuit operable to receive a plurality of input optical signal wavelengths and to generate a plurality of output optical signal wavelengths, the integrated circuit comprising:~~

~~one or more receivers operable to convert one of the input optical signal wavelengths to an electronic format;~~

~~a plurality of light sources, each light source operable to generate at a specified wavelength an unmodulated optical signal; and~~

~~a plurality of modulators, each modulator coupled to at least one of the plurality of light sources and operable to modulate information onto the unmodulated optical signal based at least in part on the electronic format.; and~~

37. (Cancelled)

38. (Cancelled)

39. (Cancelled)

40. (Cancelled)

41. (Currently Amended) The optical communication system of Claim 36, ~~device of Claim 40, wherein at least one of the plurality of optical input signal wavelengths~~ wherein the first optical signal wavelength comprises a packet comprising an identifier ~~the identifier~~ associated with a destination ~~the destination~~ element external to the optical communication system. ~~processing device.~~

42. (Cancelled)

43. (Currently Amended) The optical communication system ~~device~~ of Claim 36, wherein at least some of the one or more transmitters comprise one or more light source that ~~plurality of light sources~~ are selected from the group consisting of laser diodes and light emitting diodes.

44. (Cancelled)

45. (Cancelled)

46. (Cancelled)

47. (Currently Amended) The optical communication system ~~device~~ of Claim 36, further comprises a look up table operable to facilitate generation of at least a first control signal based at least in part on an identifier.

48. (New) The optical communication device of Claim 1, further comprising a filter to separate the input optical signal from a multiple wavelength signal received by the integrated module, wherein the filter separates the input optical signal based at least in part on the control signal generated by the controller.

49. (New) The optical communication device of Claim 1, further comprising an optical amplifier operable to amplify at least some of the optical signals generated by the one or more transmitters.

50. (New) The optical communication device of Claim 1, wherein the modulated optical output wavelength signal comprises a time division multiplexed optical signal.

51. (New) The optical communication device of Claim 1, wherein the input optical signal comprises a time division multiplexed optical signal.

52. (New) The optical communication device of Claim 1, wherein the splitter separates the multiple wavelength output optical signal into sixteen (16) or more outgoing signals.

53. (New) The optical communication device of Claim 1, further comprising a communication link comprising one or more single mode optical fibers.

54. (New) The communication device of Claim 1, further comprising a control network that couples the controller to the at least some of the plurality of integrated modules, wherein the control network comprises an Ethernet network.

55. (New) The optical communication device of Claim 1, wherein the scheduling algorithm comprises a round robin scheduling algorithm.

56. (New) The optical communication device of Claim 18, wherein the optical signal separator comprises a filter, and wherein the filter separates the input optical signal from the plurality of optical signal wavelengths based at least in part on the control signal generated by the controller.

57. (New) The optical communication device of Claim 18, wherein the integrated module comprises a plurality of optical transmitters.

58. (New) The optical communication device of Claim 18, further comprising an optical amplifier operable to amplify at least some of the multiple wavelength output signals received by the plurality of integrated modules.

59. (New) The optical communication device of Claim 18, wherein the modulated output optical signal comprises a time division multiplexed signal.

60. (New) The optical communication device of Claim 18, wherein the input optical signal comprises a time division multiplexed signal.

61. (New) The optical communication device of Claim 18, wherein the splitter separates the multiple wavelength output optical signal into sixteen (16) or more outgoing signals.

62. (New) The optical communication device of Claim 18, further comprising a communication link comprising one or more single mode optical fibers.

63. (New) The optical communication device of Claim 18, further comprising a control network that couples the controller to the at least some of the plurality of integrated modules, wherein the control network comprises an Ethernet network.

64. (New) The optical communication device of Claim 18, wherein the scheduling algorithm comprises a round robin scheduling algorithm.

65. (New) The optical communication device of Claim 18, wherein the integrated module comprises a plurality of receivers.

66. (New) The communication device of Claim 35, wherein the combiner is selected from the group consisting of a wavelength division multiplexer and a power combiner.

67. (New) The optical communication system of Claim 36, wherein at least some of a second one or more optical power splitters receive the second output signal and separate the second output signal into a plurality of second output optical signals, each of the plurality of second output optical signals comprising a substantially similar set of wavelengths, and wherein the input integrated module receives at least one of the plurality of second output optical signals.

68. (New) The optical communication system of Claim 36, wherein the optical signal separator comprises a filter, and wherein the filter separates the first optical signal wavelength from the one or more optical signal wavelengths based at least in part on the control signal generated by the controller.

69. (New) The optical communication system of Claim 36, wherein the first output signal is time division multiplexed.

70. (New) The optical communication system of Claim 36, wherein the second output signal is time division multiplexed.

71. (New) The optical communication system of Claim 36, further comprising a communication link comprising one or more single mode optical fibers.

72. (New) The optical communication system of Claim 36, further comprising a control network that couples the controller to the at least some of the plurality of integrated modules, wherein the control network comprises an Ethernet network.

73. (New) The optical communication system of Claim 36, further comprising an optical amplifier operable to amplify one or more optical signal wavelengths received by the second integrated module.

74. (New) The optical communication system of Claim 36, wherein the scheduling algorithm comprises a round robin scheduling algorithm.